



XI. *An Appendix or Supplement to a Treatise on the Œstri and Cuterebræ of various Animals.* By BRACY CLARK, F.L.S., Corresponding Member of the Royal Institute of France, &c.

Read April 6th and 20th, 1841.

THE first memoir published by me on this subject was written in the year 1796, and printed in the Linnean Transactions for that year, vol. iii. p. 289, which memoir, considerably enlarged, and forming a separate publication, was republished by me in the year 1815, with a supplement added the year following, containing further remarks and discoveries respecting this singular race of insects, to which I now beg leave to add a second appendix in the present communication. A great deal of new matter having sprung up on these subjects in the course of the years which have elapsed since I first wrote, mixed also pretty plentifully with error and confusion, (at least such I apprehend to have been the case,) I propose to review it in this essay, leaving the justice and propriety of my conclusions for the consideration and decision of others.

Not having encouragement enough for the republication of my above-mentioned work on these subjects, I am desirous by this memoir to make some additions, and also to correct some passages of that publication, in order to supply materials for any future edition of it that may at a future day possibly be undertaken by myself or others.

In the commencing or historical part of my work, at page 5, after the word "conjecture," I should desire to have inserted the following notice, viz. "That the fly alluded to by Moses in the above passage, and which is said by him 'to hiss and make a noise,' could, I suspect, have been no other than the *Œstrus Bovis* of our enumeration; and this hissing noise, so described by the inspired writer, would greatly tend to confirm the truth of Virgil's elegant description of the same thing, of its making a shrill sound or *susurrus* whilst

depositing its ovum on the back of the beast. It is true, that Bruce in his 'Travels in Abyssinia' has given the figure of a fly, which he supposes might be the object alluded to by Moses ; but on referring to his figure (pl. 39), it has no resemblance to this genus of flies, the *Cuterebræ*, but is rather, though with something fictitious about it, allied to the genus *Stomoxys*, or perhaps *Tabanus*, both of which genera are certainly silent flies in their attacks upon the cattle."

In this historical part of my essay I would desire also to insert the following passage: "We are informed by Festus Avienus, cited by Bochart, in his work entitled 'Chanaan,' lib. i. cap. 39. p. 723, that Himilco, a Carthaginian, had been sent by the senate of Carthage to discover the western shores and parts of Europe; that he successfully accomplished the voyage, and that he wrote a journal of it, which Festus Avienus had seen; and that in that journal the Islands of Britain are mentioned by the name *Æstrymnides Insulæ*, probably on account of their being greatly infested by the *Æstrum* or *Gadfly*. Which singular passage, if it can be relied upon, would appear to indicate that, at this very early date, (perhaps the very first and earliest account of these islands in existence,) our island was covered with immense forests abounding in cattle, which caused it to become the favourite resort of those troublesome insects, so much so as to be a leading object of remark to those adventurers.

At page 5 of the above essay on the *Æstri*, I would desire to rescind the following lines: "and believe that the agony the fly occasions in depositing the egg in the skin will account sufficiently for the violent agitation of the herd without this sound;" substituting for it the following: "A further and apparently positive testimony has reached me, of an ear- and eye-witness, that the female fly in depositing her egg does really accompany it with a noise most frightful to the cattle. A Herefordshire farmer of my acquaintance informed me last summer, that when he has been at plough, and especially about mid-day, and with the sun shining bright and clear, he has repeatedly been surprised in his operations by the arrival of this unwelcome guest, whose visit caused him serious annoyance, the animals attached to the plough (oxen) becoming perfectly ungovernable and scampering off with his machine. And he further states, that he can with his lips imitate the noise these flies make so exactly as to start a team of oxen by doing it near them. It is not an easy

matter by words to convey a notion of the precise sound he gives; but as nearly as I can express it by letters of the alphabet, I will endeavour to do so. It commences by a forcible whispering shrill sound, the air passing through the almost closed lips, in pronouncing the following letters, *pt—pth—ung*, concluding with the more sonorous *ung*, prolonged for some time. I am, therefore, now most fully induced to believe in the accuracy of the Mantuan bard, who was, I doubt not, practically acquainted with these things, and for which property of accuracy he has been particularly and justly celebrated.”

We may also further observe, that there cannot well be any very painful infliction, as the fly has really no instrument fitted for such a purpose, the feminine ovipositor being a mere tube, made of flexible materials, piece inserted within piece, exactly as in the common telescope. However, it is possible on its reaching the cuticle or skin of the beast, which is always highly sensitive in these hairy animals, that it might produce a degree of uneasy tickling, which, added to the noise, and perhaps an instinctive fear also impressed upon them, is altogether sufficient for the extraordinary alarm we see.

In the same page, insert as a note on *Tanagri*, “*ex τάναγρος*, i. e. *locus humidus*.” Heder. *Lexicon*.

At page 7, after naturalists, insert, “Pliny has also noticed the *Æstri*, and has recommended for protecting animals from their attacks, to anoint them well with oils and fats.”

At page 8, after “*Bots*,” insert, “The acute and witty author of *Hudibras* also has not let slip the manners of this singular race of flies: he says of them, following Pliny, though obviously in mistake,

‘The learned write, an insect breeze
Is but a mongrel prince of bees.’”—Part iii. c. 2.

At page 14, after “*Modeer*,” insert, “This last writer it was who first added a new species to the Linnean enumeration of them. His account appears in the ‘*Acta Suecica*,’ tom. vii. p. 125, and the species is introduced to our notice under the name of *Æstrus Trompe*. What the specific name alludes to I can hardly tell*, but I have of late been led to doubt that this fly might be no

* Since writing the above, on casually inspecting the ‘*Fauna Suecica*’ of Linnaeus, I believe that I have found the solution of the mystery as to the name, *Trompe*. At p. 429 of that work, No. 1722, under *Æstrus nasalis*, he writes “*Lappis, trompe*.” It is, therefore, clearly the vernacular name given it by

other than the male of *Æstrus Tarandi*, since it is found only where the reindeer frequent, although I am aware one writer asserts its having been seen in Germany. Under considerable doubts about this species, I gave in Pl. I. fig. 28. a figure of a fly I apprehended might be the one alluded to; but not to create any confusion, I called it, leaving it for further inquiry, *Æstrus Stimulator*. I now know it to be the identical insect in question, as well-ascertained specimens of this fly, obtained from Sweden, were found in the collection of J. G. Children, Esq., when his cabinet came to the hammer two years ago. I purchased them all, seven in number, and these on examination proved to be every one males, at least without any exerted ovipositor, which is common to all the females of the genus. I next examined two fine specimens contained in my own cabinet, both of which proved also to be males, at least without the ovipositor; and afterwards two others in the cabinet of my worthy friend Mr. W. E. Shuckard, Librarian to the Royal Society, which also proved to be males, or in the same circumstances as to the ovipositor; and these facts led me almost to the necessity of concluding that they were the males of *Æ. Tarandi*. The body, it is true, is particularly short and robust in this insect, whilst in *Æ. Tarandi* it is as remarkably long and taper; but this difference of structure admits of a ready explanation from the very different offices of the two flies, the female having to penetrate through the long, dense, matted coat of the reindeer's back, which must demand some force and address, and such a structure of the abdomen. Linnæus, who was himself an eye-witness of this operation in his Lapland tour, tells us that the animal stands quite still to receive the infliction, which is also very remarkable.

the Laplanders. But this name has obviously nothing to do with the real *nasalis*. Indeed it is pretty plain to me that that excellent man under this name first described the *Trompe*, as the above synonym would distinctly indicate; and in his full description he remarks on the globular figure of the antennæ, which strongly serves to confirm it. Afterwards, it would appear, he met with the real *nasalis*, that is *Æ. veterinus* of my enumeration, and he then added to the description, "*Segmentum primum pilis albis*," which is decisive of his then having in view this insect, viz. my *veterinus*, or the *nasalis* according to his 'Systema,' suspecting, perhaps, that his previous *Æ. Trompe* was not a distinct species from *Æ. Tarandi*. It is pretty clear to me that he also derived the notion of this fly entering the nose of the animal from the ignorant Laplanders, and applied this remark first to the *Æ. Trompe*, which he was then evidently describing, and afterwards to the *Æ. veterinus*. I need hardly remark here, that *Æ. nasalis*, i. e. *veterinus*, is certainly a bot of the horse, and lives in the stomach of that animal in its larva state, and is supposed (see my dissertation) to deposit its ova on the chest or breast of the horse.

We may further remark, in confirmation of this apprehension of *Æ. Trompe*, Mod., being only the male of this species, that exactly the same colours prevail in the wings of both, and the wings in this genus are highly characteristic of species. Modeer gives precisely the same term to the wings of both flies, *alis fuliginosis*, an expression rather stronger, perhaps, than the colour admits of, not truly sooty black, but of a dusky, smoky brown, mixed with a golden tinge in certain lights. The colouring of the body in both insects is nearly the same; that of *Æ. Trompe* rather brighter, as is most frequently the case in the males of all animals.

There is, however, one objection to our supposition, which was remarked to me by my friend Mr. W. E. Shuckard, viz. that the *neurion* of the wings has a small point of difference. The wing is faithfully given at Pl. I. fig. 29. of my treatise, and it may be seen that the large middle cell is bounded backwards, towards the thin part of the wing, by a flexuose margin or thread; whereas he tells me that in *Æ. Tarandi* this is straight. Whether this be fatal to my conjecture I know not, but after candidly stating it, I leave it for others on the spot where they are found to determine. A description of this species is given in my treatise under the name of *Æ. Stimulator*, as was before stated.

Herman Burmeister, in his 'Manual of Entomology,' Shuckard's translation, p. 557, makes the larvæ of *Æ. Trompe* to inhabit the *temporal cavities* of the reindeer, but does not furnish us with his authority for this assertion, and perhaps for *temporal* cavities should be read *maxillary* or *frontal*.

I have further to remark, that on examining the antennæ of this supposed species, *Æ. Trompe*, I observed a shining black spherical knob or globe attached to them, which is not to be seen at all, or at least in the same degree, in the female (if such it be): and noticing this fact, I was led to carry my observations to that supposed variety of *Æ. Bovis*, given in my enumeration as *Æ. Bovis*, var. *α. vernalis*, see p. 68, under the impression that it might be some early, abortive, or ill-fed individual of *Æ. Bovis*. Dr. Leach, however, considered this to be a distinct species, giving to it the name of *Æ. ericetorum* (vid. 'Æstrideous Ins.,' p. 2), but which I always objected to as not being sufficiently distinct. On examining this insect I found it to possess the very same globose antennæ as the above *Æ. Trompe*, which further confirmed me in the opinion that this is the male of *Æ. Bovis*, as that is the male of *Æ. Tarandi*.

This male being found in wild places and on heaths where cattle frequent in summer, is perhaps awaiting the appearance of the female flies a little later in the season. If this be true, it will reduce the genus by two species, and render it more clear, simple and appreciable. I possess numerous specimens of this *Æ. "ericetorum,"* and on examining them, find the termination of the abdomen in all of them without any stylus, see Tab. I. fig. 30, 31, of my "Essay," and conceive them, therefore, to be all males. I may further observe, that in my later description of this insect, I was led at that period to conjecture that this fly might possibly be the male of *Æ. Bovis*, but dared not affirm it, since Dr. Leach assured me he had one specimen in his collection with a stylus, which I now regard as a mistake; and having but little time to give to these pursuits, I left the subject in a doubtful state. It is necessary to add that fig. 31. of my treatise (where this insect is represented with a stylus to the abdomen) was given solely on the authority of Dr. Leach.

Having thus expunged two species, I shall proceed to obliterate a third, the *Æ. Pecorum* of Fabricius. Although some sort of grief, trouble or suffering appears to be allotted to every animal in the creation in its present condition, we have yet to learn that any naturalist, butcher or other person among the Laplanders has seen the larva of any *Æstrus* in the nose or fauces of these animals. The stag has them, it is true, in the throat, but then he has no infliction on his back or stomach; and no animals appear to be tormented in both ways. However, let search be made as to this supposed nose-bot, which will be very easily done on the spot. It is true there are four species belonging to the horse, but they are all confined to one part only, viz. the stomach. As to the insect which Fabricius describes, it is pretty clear to me, if any one could show a specimen of it, which I never yet saw, that it would prove to be no other than a dark-coloured variety of the *Æ. veterinus* of my enumeration (a colour they often assume), and answer to his description sufficiently well.

I am almost sorry to commit such havoc as to destroy a fourth species, which I do with the more regret, as it was designed to do me honour and to bear my name. This is another species of Dr. Leach's creating (see *Æstrus Clarkii*, 'Æstrideous Insects,' p. 2), which, on examination at the British Museum, where it is still to be seen so ticketed, proved to be no other than a very light-coloured variety of my *Æstrus veterinus*, called by mistake *nasalis*

by Linnæus, supposing it to be a bot of the nose. How Dr. Leach could altogether pass over my *Æ. veterinus* in his enumeration is quite inexplicable, figures of it appearing in the Linnean Transactions, admirably done by Sydenham Edwards, and again repeated in my dissertation.

Fabricius, than whom no one hardly has described insects better, in his last work has honoured my labours with his notice, adopting my suggestions in most particulars, but seems to have had some lurking hesitation about the propriety of my genus *Cuterebra*, whose characters in contrast to the *Æstri* are of the most marked kind, differing from them in several highly essential particulars, in which Latreille and all later naturalists, with whose opinions I have become acquainted, have most readily acquiesced.

I may here transiently notice, that some time since a communication appeared in the Linnean Society's Transactions, vol. xiv. p. 353, from the pen of my friend Mr. W. Sharp MacLeay, endeavouring to prove that the Linnean genus *Æstrus* did not represent the *Oistros* of the Greek writers. This idea he derived from France, the same opinion or suggestion being found in Olivier (see *Encyclopédie Méthodique*, Hist. Nat. viii. p. 453), and afterwards in Latreille and others, supposing that a *Tabanus* was more likely to have been the object noticed by the ancients. This, however, I disproved clearly, establishing my deductions from the terror of the animals under the attack of this fly, which had been so well described by their poets that it at once fixed the object; since no other of the fly kind save the little gnat accompanies his attack with any sound, (and that this gnat was not the object of their descriptions was very clear,) and the *Tabani* are all silent in their blood-sucking attacks. Other reasons were also there advanced, and were deemed by all unprejudiced readers sufficient to disprove any such idea; had however the contrary happened, and a change had taken place, it would have been accompanied with the most lamentable confusion in these pursuits. See Linn. Trans. vol. xv. p. 406 for my reply.

I am reluctantly compelled to expunge yet one more supposed species of this genus, which is evidently the result of careless compilation on the part of the German naturalists. De Villars of Lyons, in his useful and candid work, the 'Entomologia,' has presented us with an *Æstrus* which he calls by the specific name of *lineatus*; this is copied into the works of Meigen, Megerle and others as a new and true species. Conversant and familiar with the appearances of

these insects in nature, I was at no loss to discover in this *Æ. lineatus* my old acquaintance the *Æ. Bovis*, the grand stumbling-block of naturalists. The ribs and furrows on the thorax, whence De Villars named it *lineatus*, proclaimed it to be the same, and his figure, for he has given us an engraving of it also, fully served to confirm it.

At page 16, line 18 of my dissertation, insert : "On examining the work of Prof. Pallas, 'Novæ Species Quadrupedum e Glirium Ordine,' p. 50, I find the description of an *Æstrus* infesting *Lepus alpinus*, to which he gives the name of *leporinus*, and which would appear to belong to my genus *Cuterebra*. His description of it is as follows : 'Totus ater subpiloso-glaber, facie alarum-que margine crassiore lutescentibus. Magnitudine *Muscæ carnariæ*; caput facie subinflatâ pallidum, vertice, oculis, antennis, papillâque oris fusco nigricantibus; collum excentricum, ori approximatum. Corpus glabrum; thorax suprâ opacè niger punctis atris quatuor parium, duplici serie transversâ positus, quorum media antica oblongata. Scutellum prominulum apice pilis sparsum. Abdomen atrum, polito-nitidum, subtùs opaco-variegatum. Pedes pilosi, nigri. Alæ fuscæ basi margineque crassiori lutescentes, puncto exiguo disci, liturâque parvâ ad basin, nigris. Squamæ subalares albæ; halteres albo capitulo.'"

It would appear from Pallas and the American naturalists, that this singular tribe of insects, the *Cuterebræ*, extend through all the northern and subnorthern regions of the New and Old Continents; and they appear in these countries to infest chiefly the hares, rabbits, rats, mice, moles, &c. My brother sent me a small one of this genus from the Illinois, that had been found living under the skin of a dead mouse : not probably that they feed on dead animals, but this ferocious little larva, which he said had cleared the ribs of nearly all their flesh, had resorted to such food from dire necessity; the animal having died from some cause or other, and there being a cessation of further secretion of pus, it was left with no choice but to do that or die.

The above species described by Pallas is very nearly allied to, or the same with, my *C. fontanella*, described in the Linnean Transactions, vol. xv. p. 410, and figured in my Treatise, pl. 2. fig. 23. It is most probably an allied species, as there appear some discrepancies on comparing the respective descriptions.

My late worthy and ingenious friend Latreille has written on this subject

in a way that seems to require some remark, in the 2nd edition of the 'Règne Animal,' the joint production of himself and Cuvier, tome v. p. 499, where he gives a tolerable view of this family, derived chiefly from my labours, and afterwards, at page 503, enters on an enumeration of the species. On the subject of the *Æ. Equi*, although quoting my work, he omits altogether my account of the manner of their depositing their eggs on the knees of the horse, although a most singular and interesting fact. Proceeding to the *Æ. hæmorrhoidalis*, he omits the circumstance of their eggs being deposited on the chin and beard of the horse, and next passing to the *Æ. veterinus*, he renews the old and erroneous tale which was formerly attached to the *Æ. hæmorrhoidalis*, of its depositing its eggs on the margin or verge of the anus.

We may perhaps, at this point of our review, consider a little the strange proposition first started by Pallas, of there being in nature such a thing as a proper human *Æstrus*, which has since been maintained by others. For the honour of human nature I utterly discredit any such thing, as that the lord of the creation, walking erect and clothed from head to foot, and carrying if he pleases all sorts of offensive or defensive weapons, should be the natural object of attack of a large winged insect, pursuing and dodging him, for the purpose too of making him the subject of maintenance of its future offspring. The facts which appeared to favour such a doctrine are easily explained, I apprehend, by the eagerness and solicitude of the parent fly to find a suitable opportunity of depositing its eggs, which induces it to resort, in the absence of the proper nidus, to the next best object that presents itself, and if it finds a man fast asleep and with any part of his body exposed, he will certainly become the object of its infliction, nor is this to be much wondered at. But would it not be quite absurd, from such an *error loci*, to argue that this was the legitimate office and operation primarily intended by the Creator? Almost as well might we imagine the sea to be the proper habitat of the dragon-fly, because Berkenhout says he took one on that element three or four leagues from land; or, on finding a *Cimex rufipes* on a gentleman's bag-wig in Fleet Street, as he says he did, to give this as the natural habitat of that species.

Most certain, however, it is, that the *Æstri* and *Cuterebræ*, if disappointed of their natural nidus for deposit, and impelled by hard necessity, will find out

strange receptacles for their young. But we may remark, that if they did succeed in depositing their eggs in the human body, they are quite sure to lose their labour, and their object would be frustrated by the removal of the larvæ, which the individual himself can do readily, or his surgeon would not fail to do for him, so that the race must speedily become extinct if such were bestowed upon them as their natural and proper nidus and place of deposit.

In a late medical periodical, whose title I do not exactly recollect at the moment, is a strong statement of a case of this kind, by the late Surgeon Howship, intended to establish the doctrine of the existence of a human *Æstrus*, at page 174 of the number containing it, elaborately written, and assisted by my friend Mr. John Curtis, of well-known entomological celebrity. The larva there given, though much altered in appearance by being pulled out and lengthened, and perhaps by a degree of putrefaction ere it was placed in spirits, agrees in so many, if not all, particulars of make with the larva of *Æstrus Bovis*, given in my plate, that there is little doubt of its being the same. I at first imagined it might prove the larva of a *Cuterebra*, whose parents are very bold in respect of deposit, but a subsequent investigation makes me rather refer it to the above. The sacculated appearance of the skin, and the double rows of spines, are exactly as described by me, and other strong circumstances leave little room to doubt of its being the above species, of all others the most active in producing these misplaced phænomena. We may observe that the cow's back is covered with hair; and the human scrotum also (the part where this specimen was found) being covered with hair, would the more readily induce the deposit in this particular part, if exposed. Sometimes the eggs have been laid in the skin of the human abdomen, the other parts above alluded to being perhaps covered at the time and not exposed to the attack of the insect, or they would probably have obtained a preference.

Mr. Howship, in the above-mentioned communication, appears to have mistaken the tail of the larva for its head, as was very natural, that part being largest and uppermost in the abscess. It is obvious that, had it been otherwise placed, respiration would have been impracticable, as the head is downwards in the abscess for the purpose of receiving nutriment with the mouth, surrounded with pus of ready access, and the anus, on the contrary, is placed upwards, for the more ready ejection of the fæces out of the abscess, and is

also placed near to the two respiratory plates. The head too of the fly is always contained in the narrow end of the chrysalis, contrary to its position in most other insects, as may be seen in my Treatise, pl. 2. fig. 7. A real *Cuterebral larva* is figured also in my enumeration, pl. 2. fig. 24, which seems too dissimilar to be of the same genus.

Another statement, somewhat hostile to my conclusions, which is perhaps deserving of notice, has also appeared in the 'Entomological Magazine,' No. 23. p. 33, renewing the old doctrine of the fatal effects of these larvæ, and of their eating or boring holes through the coats of the stomach of the horse, and stating, in supposed opposition to my opinion, that they really feed on chyle, and not on the green contents of the stomach. My answer to these remarks was given in the succeeding number of the same Magazine. I readily admitted that they fed on chyle, for such had ever been my opinion and was plainly stated as such in my works; but as to their boring propensities, these I could not acquiesce in, since they possessed no teeth nor other instruments of any kind by which they could possibly achieve any such intentions. Neither did I believe their instinct to be of so fallible a character as to permit them to gnaw away and destroy their own standing, and so let themselves fall through the openings they had made into the cavity of the abdomen, there miserably to perish, for from thence there was no outlet or escape. I thought this short announcement might help to suppress any suggestions of this kind in future, as such ideas had been very general, and were industriously entertained and spread. A preparation of a horse's stomach, so "gnawed" by the bots, used to be exhibited at our Veterinary College, as supporting this vulgar opinion; but on a more scrupulous examination of it, it turned out that the stomach had been suffered to get putrid and tender, and then the bots had been thrust by some one, some half, some a quarter, and some wholly through the coats of the entire stomach: it has been since destroyed, at least it is no longer to be seen there.

Having somewhat diminished the numbers of this active family at the commencement of my paper, I shall now proceed to repair the loss in some degree by the description of three species, not described in my enumeration, which the kindness and industry of my entomological friends have since supplied.

The first of these was originally found in Germany, and subsequently in our own country, having been taken June 12th, 1823, in the New Forest in Hampshire, a spot remarkable for its rare treasures in natural history. My esteemed friend Mr. Samouelle, who took it, very kindly lent it to me to draw and describe. Megerle has thought proper to give to it the specific name *pictus*, "painted." This I somewhat regret, as *pictus*, "painted," generally has an allusion to gay colours, and this is of a darkish blue. The specific name *cæruleus* would have been much preferable, as, for an *Æstrus*, this colour is quite unusual. The name of *pictus*, when the animal it infests is known, and its place of residence in the larva state ascertained, will probably be changed for a more useful and significant one, and so indeed of the remaining species, obliterating my own name likewise.

ÆSTRUS PICTUS. The blue Bot-fly.

Atro-cæruleus cinereo versicolor, thorace punctis quatuor liturâque atris.

Diss. nostræ Tab. I. fig. 40.

Meigen, Syst. Beschreib., tom. iv. p. 172.

Curtis, Brit. Entom., pl. 106. fig. 1.

Habitat in Europâ. • New Forest Angliæ, D. Samouelle.

Descr. *Æ. Equi*, nostræ enumerationis, ferè bis major, convexior, et thorace ratione abdominis robustiore. *Frons* cum antennis et oculis rufescentibus, argenteo parùm relucens; vertice fuscescente. *Thorax* longior, quàm in cæteris speciebus robustior, alis ad partem posteriorem insertis, penè uti in *Cuterebris*, ad latera cinereus, seu potiùs argenteo-cinereus, punctis 4 triquetris, atris, distinctis, liturâque in medio nigrâ, et punctis 4 nigris obscurioribus; posticè inter alas niger. *Scutellum* obscurè ferrugineum, punctis duobus inconspicuis ad basin. *Squamula* alarum convexa, major, margine obfuscata. *Abdomen* breve, e segmentis 4, pube in maribus inflexâ; supernè in medio latè nigrum, ad latera posticèque e cinereo argenteo mixtum et fritillis quasi tessellatum characteribusque variis atris conspersum; subtùs nigrum, argenteo irroratum, versicolor. *Pedes* simplices, rufi, femoribus anticorum subtùs pilis brevibus atris, uti tota corporis superficies. *Unguiculæ* distantes incurvatæ. *Alæ* limpidæ, ad basin et anteriùs obscuriores, maculis tribus nebulosæ, areolæque e venis confectâ. In plurimis cum *Æ. Ovis* consistit; anne hoc sit insectum pharyngem Cervorum infestans quærendum?

ÆSTRUS LIBYCUS.

Cinereus, thorace punctis 4 alisque punctis 3 nigris.

Habitat in *Ægypto*, D. Rüppel.

Descr. Mas magnitudine et staturâ ferè *Æ. Ovis*. *Totum corpus* cum capite cylindriforme.

Facies magna, pars inferior cum antennis flavescenti-alba; vertice fusco, stemmatibus 3 nigris. *Oculi* rufescentes, majores. *Thorax* cinereus, anticè foveolâ impressus, utrinque punctis duobus pertusis atris, posterioribus elongatis. *Scutellum* magnum, cinereum, lateribus nigro inquinatum, atomisque duobus mediis nigris. *Abdomen* breve, obtusum, argenteo-albidum, ad atera scabriusculum, punctis fuscis nonnullis elevatis quasi respiratoriis; subtùs album. *Pedes* rufescentes, femoribus annulo unico, tibiis annulis duobus, nigris. *Alæ* albo-pellucidæ, basi nigricantes, puncto fasciâque transversâ flexuosâ costæ adnexâ lincolâque, atris.



Æ. Libycus.

For the following remarkable species I am indebted to my amiable friend Mr. W. E. Shuckard, who obligingly presented it with the name also kindly annexed.

ÆSTRUS CLARKII.

Cærulescenti-fuscus, alis obscuris anticè sinuatis basin versus atro bipunctatis.

Habitat ad Caput Bonæ Spei. W. E. Shuckard, monographus cel. Insectorum Hymenopterorum, qui, unâ cum nomine triviali, lubentissimè mihi communicavit.

Descr. *Æstro Ovis* bis major. *Facies* nuda (utî totum corpus), lata, flavo-albida, antennis altè immersis nigris; oculi grisei; vertex fuscus, punctis duobus parvulis nigris lucidis. *Thorax* ratione abdominis grossus, oblongus, alis posticè insertis. *Scutellum* majusculum, dorso canaliculatum. *Abdomen* fusco-cæruleum, breve, ovatum, ex lineis impressis quasi in tesseras profundè divisum, dorso in medio longitudinaliter porcatum seu lineâ assurgenti munitum. *Femora* vix compressa, nigra, geniculis tarsisque griseis. *Unguiculæ* valdè divergentes, incurvæ, membranulis duabus interpositis. *Alæ* fuscæ, ad costam retrò sinuatæ, maculâ punctoque baseos atris distinctissimis, alteroque minimo in ipsâ costâ. *Halteres* flavo-lactææ, tumidæ, majores, subtriquetræ.

Conjicit amicissimus Shuckard hanc speciem inter pecora majora Capensia habitasse.

I may here remark, that my kind friends have three times endeavoured to connect my name with an insect, and twice has it been proved to be nugatory by my own researches. The first was by my friend Jurine, at Geneva, attaching my name to a splendid *Tenthredo*, found by me near Orbe. This I

ascertained on my return to England, from a miserable relic in the Linnean cabinet, to have been identical with *T. reticulata*, L., which I pointed out to Dr. Smith, who informed other naturalists. The second was Dr. Leach's *Œ. Clarkii*, which I have shown in the present memoir to have been no other than the Linnean *Œ. nasalis*, so called by mistake, the *Œ. veterinus* of my enumeration. The present I believe to be a real novelty.

ERRATA ET ADDENDA.

Page 82, l. 4,—read, *or to the Cuterebræ.*

l. 20,—read. The following is the passage of Avienus, as quoted in Bochart's *Geographia Sacra*, p. 723,—

In quo insulæ sese exerunt Œstrymnides,
Late jacentes et metallo divites,
Stanni atque plumbi, &c.

Also the following:—

Tartesiisque interminos Œstrymnidum,
Negotiandi mos erat.

AVIENI, *Ora Maritima*; Tom. 5, p. 1181-5, ed. Helmstead 1792.

The above passage has undoubted reference to the British Isles; and the Poet Avienus is supposed by his German commentators to have lived in the fourth century of our era. It will perhaps be reflected, however, that Julius Cæsar gave a tolerable account of these islands and of their treasures within the first century, calling them *Britannia*; nevertheless this Carthaginian manuscript so referred to by Avienus, might have been four or five hundred years old, and written before Cæsar's time, in the early period of the Greeks and Phœnecians forming that colony.

Though but little versed in Greek, we are led to conjecture that the above epithet *Œstrymnides* to be compounded of *Oistros*, *menos*, *oides*. *Menos*, signifying excitement, rage, or infuriation. The *oides*, being exchanged by elision to *ides*, as in *Hesperides*, and many others.

Page 86, l. 19,—dele *among the Laplanders*, also dele “nose and fauces,” r. *intestines*, as in his original edition, 1794, Tom. 4, p. 230.

Page 91, l. 5,—Pallas has however given a figure of this supposed human *Oestrus*, but what does it prove to be, neither more nor less than the *Oestrus Equi* of my enumeration. The wings are similarly marked, but not so strongly, as in our more Southern individuals; and this I also observed was the case in a considerable number of Danish *Oestri Equini*, procured from a herd of horses of this country, imported here about ten years since.

92, l. 5,—ins. “see dissertation,” t. i. fig. 40. after “describe.”